



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/578,605

03/26/2007

Alan Mole

7043-X06-002

3454

27317 7590 01/20/2010  
Fleit Gibbons Gutman Bongini & Bianco PL  
21355 EAST DIXIE HIGHWAY  
SUITE 115  
MIAMI, FL 33180

EXAMINER

MATHEW, HEMANT MATHAI

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

01/20/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/578,605	<b>Applicant(s)</b> MOLE, ALAN	
	<b>Examiner</b> HEMANT MATHEW	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15, 17-20 and 23-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 17-20 and 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The Amendment filed October 27, 2009 has been acknowledged. Claims 16, 21, and 22 have been canceled. Claims 15, 17-20, and 23-27 are pending.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15, 17-20, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldredge (WO 01/78793 A1), in view of SpringerLink-Journal Article, and further in view of Potember (US 2004/0120845 A1).
4. Regarding claim 15, 17, 19, 20, and 27, Eldredge discloses a produce decontamination apparatus or sterilization apparatus (abstract line 1) comprising a chamber or sterilizing generator (100) for accepting produce to be decontaminated and/or sterilised, and means for producing a free radical saturated atmosphere within the chamber so that, in use, the free radical saturated atmosphere decontaminates and/or sterilises the produce (abstract lines 1-5). Eldredge discloses that the means for producing a free radical saturated atmosphere comprises one or more first atomising sprayheads (222), a supply of ozonised liquid which is supplied to the first sprayheads (pg. 28 lines 1-5), and ultraviolet (UV) light emitting device (810) acts as a means for breaking down the ozone forming part of the ozonised liquid once discharged from the

Art Unit: 3742

first sprayheads (pg. 21 lines 15-19). Eldredge discloses one or more second atomising sprayheads (222, as schematically shown in Fig. 7) where one is a first atomising sprayhead and another one is a second atomising sprayhead. Eldredge discloses the use of coatings to limit the corrosive effects of the ozone (pg. 17 lines 22-24 – pg. 18 lines 1-4).

Eldredge does not disclose means for catalyzing the breakdown of the ozone of the ozonised liquid once discharged. Eldredge does not disclose a catalysing liquid which includes ferric ions that is supplied to the second sprayhead, in which the catalysing liquid catalyses the breakdown of the hydrogen peroxide formed from the ozone of the ozonised liquid once discharged from the second sprayhead. Eldredge does not disclose the use of coatings as a means for catalysing the breakdown of the ozone includes a coating on the interior surface of the chamber, the coatings having one or more ozone catalyzing materials.

SpringerLink-Journal Article discloses “hydrogen peroxide decomposition in acidic solutions is catalyzed by the free ferric ion,  $\text{Fe}^{3+}$ ”.

Potember discloses a method and apparatus for neutralizing air-borne pathogens in ventilated air, and in heating or air conditioning systems in which coatings on an optional solid support on an interior surface of a reaction chamber acts as a means for catalyzing the breakdown of ozone, the coatings having one or more ozone catalyzing materials (para. 0042).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Eldredge by employing

Art Unit: 3742

the teachings of the SpringerLink-Journal Article and Potember in order to allow for an acidic solution which includes ferric ions as a catalysing liquid to catalyse the breakdown of the hydrogen peroxide formed from the ozone of the ozonised liquid once discharged from the second sprayhead in order to aid the ultraviolet light emitting device to breakdown remaining hydrogen peroxide and ozone and further breakdown of the ozone by coatings on the interior surface of the chamber.

5. Regarding claim 18, Eldredge discloses that the means for producing a free radical saturated atmosphere further comprises means for catalysing the breakdown of hydrogen peroxide formed from the ozone of the ozonised liquid once discharged (abstract lines 3-4).

6. Regarding claim 26, Eldredge discloses that the chamber is open to atmospheric pressure since the oxygen concentrator (108) is a part of the chamber (100) and extracts oxygen from the air (pg. 15 lines 20-21).

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eldredge, in view of SpringerLink-Journal Article, and further in view of CSA Illumina.

8. Eldredge does not disclose that one of the ozone catalysing materials is one of titanium oxide, titanium dioxide, or manganese oxide. CSA Illumina discloses that “manganese dioxide based catalysts provide the high ozone destruction...” Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Eldredge, with a manganese dioxide or manganese (VI) oxide coating as an ozone catalysing material.

9. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldredge, in view of SpringerLink-Journal Article, and further in view of Kamm (6,725,674).

10. Eldredge discloses the use of a conveyor system (pg. 28 lines 1-7). However, Eldredge does not disclose that the chamber houses two vertically spaced conveyors in which the vertical spacing between the conveyor belts is adjustable. Kamm discloses two conveyors (4 and 5) in which material is moved up a tower by a first conveyor (4) and then later moved down the second tower by a second conveyor (5). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus as taught by Eldredge, with the two conveyors and towers that move material up and down the towers since the conveyors move to their required locations along the tower, the vertical spacing between the conveyor belts is adjustable in order to allow for produce to be thoroughly affected by the ozonised liquid.

### ***Response to Arguments***

11. Applicant's arguments filed October 27, 2009 has been acknowledged. The arguments with respect to the drawing objections, specification objections, and 112 rejections have been fully considered and are persuasive in view of the amendments and corrections.

Art Unit: 3742

12. Applicant's arguments with respect to claims 15, 19, 20, and 23-25 have been considered but are moot in view of the new ground(s) of rejection as necessitated by amendment.

### ***Conclusion***

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEMANT MATHEW whose telephone number is (571) 270-5604. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

Art Unit: 3742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEMANT MATHEW/  
Examiner, Art Unit 3742

Date: January 15, 2010

/Reginald L. Alexander/  
Primary Examiner, Art Unit 3742